

## Claims

- [c1] What is claimed is:
- 1.A method for decoding instructions in an execution package with a processor, each instruction comprising an identification segment and an instruction segment, the method comprising:  
using the processor to decode identification segments of the instructions at the same time.
  - [c2] 2.The method of claim 1 wherein the identification segments include data specifying lengths of corresponding instruction segments.
  - [c3] 3.The method of claim 2 wherein each identification segment includes information to indicate whether an instruction corresponding to the identification segment is a last instruction in the execution package.
  - [c4] 4.The method of claim 3 wherein a length of each identification segment is added together to calculate a total length of the execution package.
  - [c5] 5.The method of claim 1 wherein number of instructions in an execution package is less or equal to number of instructions that the processor can execute at the same time.
  - [c6] 6.The method of claim 1 wherein the instructions are variable length instructions.
  - [c7] 7.The method of claim 1 wherein the processor is a digital signal processor (DSP).
  - [c8] 8.The method of claim 1 further comprising using an assembler to assemble instructions into different execution packages.
  - [c9] 9.The method of claim 8 further comprising using the assembler to reorder the instructions by separating identification segments from instruction segments, grouping all identification segments of the execution package together, and grouping all instruction segments of the execution package together.
  - [c10] 10.A method for decoding instructions in an execution package with a

processor, each instruction comprising an identification segment and an instruction segment, the method comprising:

- using an assembler to assemble instructions into different execution packages;
- using the assembler to reorder the instructions by separating identification segments from instruction segments, grouping all identification segments of the execution package together, and grouping all instruction segments of the execution package together;
- using the processor to decode identification segments of the instructions at the same time; and
- adding a length of each identification segment together to calculate a total length of the execution package.

[c11] 11.The method of claim 10 wherein the instructions are variable length instructions.